PREPRODUCTION INITIATIVE
WIRE ROPE LUBRICATOR
TEST PLAN

SITE: NAS NORTH ISLAND

1.0 OBJECTIVE

This test plan describes the data collection procedure for evaluating the use of a wire rope lubricator in a Navy operational environment. The data will be used to determine the machine's efficiency, effectiveness, and overall success cleaning and lubricating various sized cables that are used on cranes. The environmental and cost benefits of using such a machine versus the currently used method of hand wiping the cables with rags soaked in grease will be evaluated.

2.0 DESCRIPTION

Testing will be conducted on the cables used on cranes. The cables on the 8 ½-ton maintenance crane, for example, are cleaned once per year. The current method of cleaning and lubricating these cables to remove old grease involves hand wiping the cables with a rag soaked with dry cleaning solvent. New grease is applied to the cables by hand using more rags. The materials used during this cleaning process are 1 gallon of P-D-680, 2 gallons of grease, plus numerous rags. The process is messy and often results in lubricant spills; in addition, solvent- and lubricant-laden rags must be disposed of as hazardous waste. The wire rope lubricator will reduce labor time, spills, and the quantity of waste rags used since it applies grease to the cable in a closed-loop system.

The wire rope lubricator has four main components: the lubrication collar, pump system, seal, and scraper plate kit. The lubrication collar consists of a two-halved aluminum housing, which is clamped around the cable. Two chains anchor the lubrication collar while the cable is pulled through it. Low viscosity lubricant enters the lubrication collar through the lubricant input portal. Pressure is created as the central lubrication collar fills. Once lubricant and pressure levels are reached, the lubricant will be forced between the strands of the cable and then move to the discharge portals at either end of the lubrication collar. According to the vendor, minimal excess lubricant drops into a pail under the cable. Grease overflow is reduced or eliminated by coordinating the lubricant supply, the air pressure, and the travel speed of the wire rope. This also results in the maximum coating of the wire rope.

Seal and scraper plate kits are provided to enhance lubrication of the wire rope. The seals are provided to ensure that the cable is aligned in the lubrication collar and to prevent lubricant leaking from the unit. The scraper plates remove debris from the outer strand of cable as it enters the lubrication collar and wipe off excess grease into a pail after application. The entire process is controlled by three adjustments: an air regulator (which adjusts airflow to the pump air motor), the lubricant flow control valve (which

controls lubricant feed to the lubrication collar), and the ball valve or load line (which controls the speed of the cable being pulled).

The SU35B Wire Rope Lubrication System selected for assessment at NAS North Island cleans and lubricates cables of 1/8" to 1 5/8" in diameter and holds a single 5-gallon pail of lubricant.

3.0 TEST PLAN

This test plan will be used to evaluate the effectiveness of the SU35B Wire Rope Lubrication System. Quantitative and qualitative data will be collected and used to evaluate the system's ability to provide safer and more efficient wire rope cleaning and lubrication while eliminating the use of P-D-680 and minimizing hazardous waste.

3.1 Approach

One SU35B Wire Rope Lubricator will be used during the implementation of this test plan. Quantitative and qualitative data will be collected through completion of the Wire Rope Lubrication Log and the Monthly Maintenance and Repair Log. This system will be evaluated for approximately 12 months.

3.2 Instructions for Completing the Wire Rope Lubrication Log Sheet (Table 1)

The following data will be collected to evaluate the performance of the wire rope lubricator. Complete this log each day that the wire rope lubricator is used.

- **Date—**Indicate the date on which the unit was used.
- **Type of Crane—**Indicate the type of crane on which the unit was used.
- **Diameter of Cable**—Indicate the diameter of the cable that was lubricated.
- **Length of Cable**—Indicate the length of the cable that was lubricated.
- **Time—**Record the start and end times used to lubricate the cable, including equipment setup and cleanup.
- **Number of Operators—**Indicate how many operators performed the cable lubrication.
- **Rags Used—**Indicate the number of rags used.
- **Gallons of Grease Applied—**Record the volume of gallons of grease that was applied to the cable.
- **HazWaste Disposed—**Record the amount of hazardous waste disposed of after the cable was lubricated.

3.3 Instructions for Completing the Monthly Maintenance and Repair Log Sheet (Table 2)

The following data will be collected at least on a monthly basis.

- **Month**—Enter the month in which the maintenance/repair occurs.
- **Name**—Enter the name of the individual completing the log.
- **Maintenance Required**—Indicate whether maintenance was performed during the month. Also, record the amount of time required to perform the maintenance.
- **Repairs—**All repairs must be arranged through Geneen McQuaid, UTRS, Inc.
  - **Time—**Indicate the time required to repair the system.
  - **Parts—**List the repair parts required.
  - **Description of Repair—**Describe what the repair involved.
- **Qualitative Assessment—**Provide a narrative evaluation of the capabilities of the wire rope lubricator. Briefly discuss the following:
  - The unit's efficiency and cost-effectiveness.
  - Ease-of-use and the unit's ability to successfully interface with site operations.
  - Additional information as required.

4.0 REPORTING

The data sheets are a concise method of data collection. Forms should be completed when the equipment is used. Data will be collected for 12 months. During this time, fax both completed log sheets monthly to provide results of the testing. The final report will include detailed results and observations, assess the efficiency and cost-effectiveness of the equipment, and evaluate its ability to interface with site operations.

4.1 Points of Contact

If any questions arise or if repairs are necessary during the evaluation period, please contact either of the following individuals immediately.

POC	Affiliation	Phone Number	Fax Number
Geneen McQuaid	UTRS, Cherry Hill, NJ	(856) 667-6770	(856) 667-7586
Walt Koehler	NAWC Lakehurst, Lakehurst, NJ	(732) 323-7907	(732) 323-7907

Please note that due to contract requirements, the vendor should **not** be contacted directly unless there is an emergency. All communication with the vendor should be directed through UTRS.

Table 1 Wire Rope Lubricator Log Sheet

Date	Type of Crane	Diameter of Cable	Length of Cable	Time		Number of Operators	Number of Rags Used	Gallons of Grease Applied	HazWaste Disposed
				Start	End				

Table 2
Monthly Maintenance and Repair Log Sheet

Month:_____
Name: _____

Did you need to perform any maintenance on the SU35B? Yes ☐ No ☐

If yes, please explain:_____
_____
_____

Record the amount of time necessary to perform maintenance:_____

*If consumables (i.e., scrapers, seals) are needed, contact Geneen McQuaid (856) 667-6770 or Walt Koehler (732) 323-7907.

Repairs

Time	Parts	Description of Repair

*Please contact Walt Koehler or Geneen McQuaid before performing repairs.

Qualitative Assessment: Please comment on the effectiveness and efficiency of the unit.

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*Attach additional sheets as needed